NON-PUBLIC?: N
ACCESSION #: 8808050234
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Perry Nuclear Power Plant, Unit 1 PAGE: 1 of 3

DOCKET NUMBER: 05000440

TITLE: Reactor Scram Due to Unexpected Main Turbine Trip Caused by Mechanical Failure of Turbine Trip Latch Assembly.
EVENT DATE: 06/23/88 LER #: 88-026-00 REPORT DATE: 07/23/88

POWER LEVEL: 080

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Gregory A. Dunn, Compliance Engineer
TELEPHONE #: 216-259-3737 Ext. 6484

COMPONENT FAILURE DESCRIPTION:
CAUSE: B SYSTEM: TA COMPONENT: 12 MANUFACTURER: G084
REPORTABLE TO NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On June 23, 1988, at 0944, a reactor scram occurred due to an unexpected turbine trip with reactor power greater than the scram bypass setpoint. At the time of the event, control room operators were performing weekly turbine testing requirements. All plant systems functioned as designed, and the plant was stabilized in a normal Hot Shutdown condition.

The cause of the turbine trip was a mechanical failure of the trip latch assembly attributed to improper clearances within the mechanism established during manufacturing and initial installation. The component supplier, General Electric, has been notified of the deficiency for potential generic application.

In order to prevent recurrence, the defective parts were replaced and proper clearances within the mechanism were established by machining of various trip latch assembly surfaces. System retests were performed to ensure proper operation of the trip assembly, and the plant was returned to full power on June 27, 1988.

(End of Abstract)

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On June 23, 1988, at 0944, a reactor scram occurred due to a Turbine Control Valve fast (TCV) (FCV) closure and Turbine Stop Valve (TSV) (SHV) closure with reactor power greater than the scram bypass setpoint. At the time of this event, the plant was in Operational Condition 1, (Power Operation), with reactor power approximately 80% of rated thermal power, and reactor vessel (RPV) pressure at approximately 970 psig.

On June 23, control room operators were performing weekly turbine testing in accordance with an approved Periodic Test Instruction. The Mechanical Overspeed Trip Test is accomplished through automatic sequencing of all actions necessary to isolate the hydraulic trip system, exercise the overspeed trip device (12) and trip latch assembly, reset the trip mechanism and trip system, and unisolate the trip system. Indicating lights are available to inform the operator of actual system conditions at all times. This arrangement allows full verification of the operability of the overspeed trip device without causing an actual trip of the turbine. At 0944, approximately nine seconds after completion of the mechanical overspeed trip sequence, an actual trip of the main turbine occurred, depressurizing the Emergency Trip System (ETS) (TG), closing all hydraulically actuated TSVs and TCVs. When ETS pressure decreased below the reactor scram setpoint (530 psig), a full reactor scram was initiated. Additionally, the end-of-cycle recirculation pump (AD) transfer to slow speed occurred due to the valve closure. All plant systems functioned as designed, and no additional safety systems were initiated. Plant operators responded to the event in accordance with approved operating instructions, and the plant was stabilized in a normal Hot Shutdown condition. After initial investigation, the Plant Manager granted permission to restart the plant, to allow further troubleshooting of the turbine trip assembly at rated speed.

The cause of the event was component failure. Investigation by the system engineer and vendor (General Electric) representative identified abnormal wea

on the latching surface of the trip latch rod (GE Part No. 174B3274P0001) in the trip latch assembly. The observed degradation of the trip latch rod caused the unexpected trip of the turbine, with no trip initiation signal present. This was verified during troubleshooting, when attempts to reset the trip latch assembly were unsuccessful. The abnormal wear of the trip latch rod has been attributed to insufficient clearance between the trip latch assembly and the overspeed trip device when in the tripped condition. This clearance is established during the manufacturing and installation of the trip latch assembly, and should not require subsequent adjustment or verification. General Electric has been notified of the defect

for potential generic application.

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Corrective action to repair the trip assembly and prevent recurrence consisted of replacement of the trip latch rod and machining of various trip latch assembly surfaces to obtain proper clearances. After retests were performed to ensure proper operation of the trip assembly the plant was returned to full power operation on June 27, 1988.

The reactor scram on a turbine trip or turbine control valve fast closure is initiated in anticipation of the pressure, neutron flux, and heat flux increase that could result from fast closure of the turbine control valves. Turbine Control Valve fast closure and Turbine Trip from full power has been fully analyzed and is discussed in the Safety Analysis Report (USAR Sections 15.2.2 and 15.2.3). All aspects of this event were within the envelope of this analysis, and all plant systems functioned as designed. This event, therefore, is considered to have no safety significance. No previous similar events were identified.

Energy Industry Identification System Codes are identified in the Text as (XX).

ATTACHMENT # 1 TO ANO # 8808050234 PAGE: 1 of 1

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July 22, 1988
PY-CEI/NRR-0891 L

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
LERs 88026, 88028

Dear Sir:

Enclosed are Licensee Event Reports 88026 and 88028 for the Perry Nuclear Power Plant. Licensee Event Report 88027 will be forthcoming.

Very truly yours,
/s/ A. Kaplan
Al Kaplan
Vice President
Nuclear Group

AK:njc

Enclosure: LERs 88026, 88028

cc: T. Colburn
K. Connaughton

U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

*** END OF DOCUMENT ***